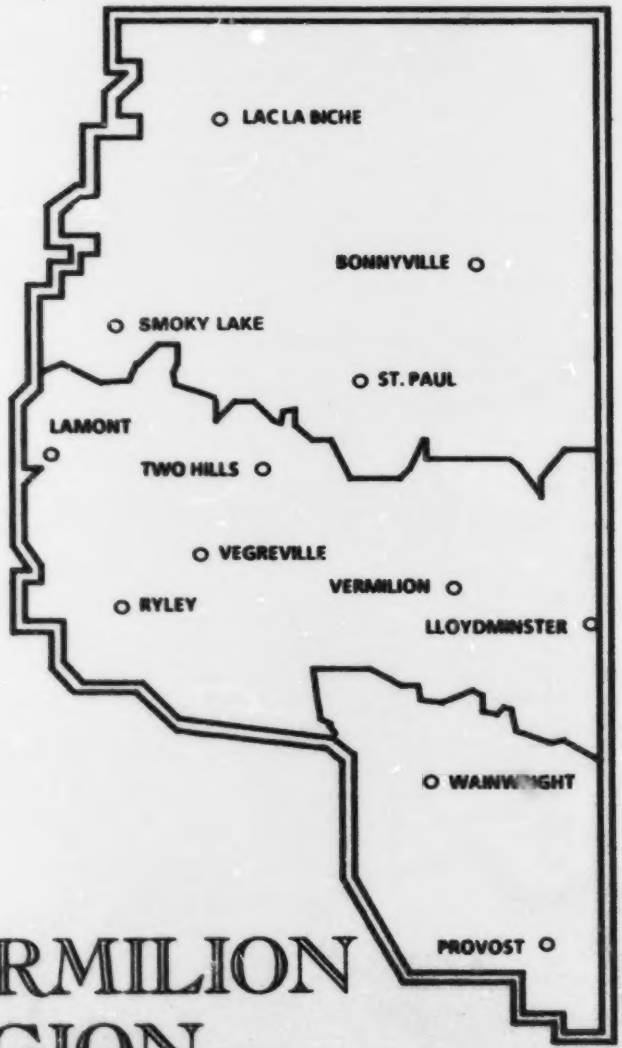
THE ALBERTA REGIONAL FARM ENTERPRISE RESEARCH PROJECT



VERMILION REGION 1983

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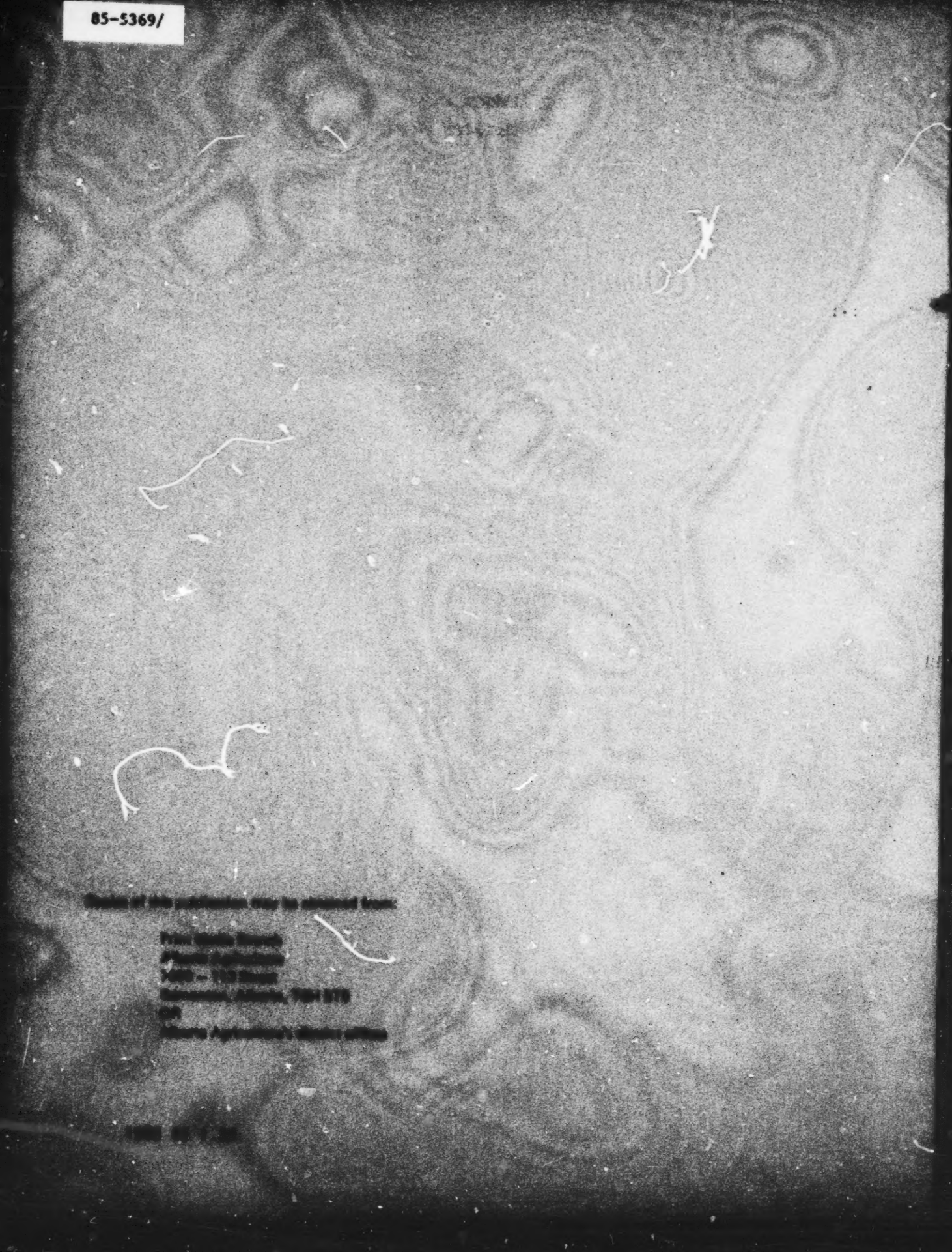

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VERMILION REGION

by
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Alberta Department of Agriculture
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SECTION I

INTRODUCTION

The Alberta Regional Farm Enterprise Research Project was initiated by the Production and Resource Economics Branch in the Vermilion Region in the winter of 1979. The main objective was to obtain 1978 production costs and returns estimates for the main farming enterprises, namely, crops, cattle feeding, hogs and milk production. Following an appraisal of the 1978 study year and the general enthusiasm expressed among the participants, it was felt that the project should be continued but that changes were required to enhance the analysis of raw data.

The number of farms participating during the last five study years were 45, 54, 43, 54, and 53 for 1978, 1979, 1980, 1981 and 1982, respectively. A major improvement to the study method occurred in 1979 when the questionnaire was revised and the analysis computerized. Since then, changes made to the questionnaire and computer package were kept at a minimum so as to allow participants to compare the performance of their farm over time. Reports summarizing each of the 1979-1982 study years have been published, the last of which was released in August, 1984.

Approximately 72 per cent of the 1982 participants (26 farmers) were retained on study in 1983. Major enterprises studied in 1983 included cow-calf and cattle feeding, milk production, crops, and hogs. This report summarizes the results of the 36 farm records that were completed and analyzed for the 1983 study year.

As in previous years, the degree of enterprise mix on the farms surveyed in the Vermilion region was quite high as 55 per cent had both grain and livestock on their farms. Of the 17 specialized farms studied, two were hog farms while the remaining 15 were grain farms. A breakdown of the enterprises analyzed and their respective numbers is as follows:

ENTERPRISE	NUMBER ANALYZED
Wheat	34
Canola	30
Barley	32
Oats	8
Summerfallow	20
Hay	21
Greenfeed	9
Silage	8
Mixed Grain	4
Hog Farrow-Finish	3
Milk Production	3
Cattle Finishing	3
Cow-Calf Finish	5
Cow-Calf	8
TOTAL	188

Objectives

The Alberta Farm Enterprise Research Project was developed to help the agricultural producer analyze his farming operation(s) using the enterprise approach. Different from the original Farm Business Analysis (F.B.A.) program, this project was designed to provide the farmer (participant) with an analysis of each crop and livestock enterprise on his farm.

Extension personnel have often found themselves short of enterprise/whole farm costs and returns information when dealing with farm clientele at the field level. Physical and financial production data for different farming enterprises vary not only within the region but also from farm to farm depending upon the enterprise mix, moisture levels during the growing season, soil type, management practices, etc. Consequently, the objectives of the Alberta Regional Farm Enterprise Research Project are as follows:

1. To document detailed input/output and costs/returns data on both an enterprise and total farm basis for the six farming regions of Alberta;
2. To document enterprise/whole farm data (physical and financial) that accurately describe the relative performance of beginning farmers;
3. To provide each participant with accurate and detailed costs/returns information on both an enterprise and total farm basis;

4. To provide each participant with a comparative interpretation of his farming enterprise(s) relative to the total group studied in the region;
5. To evaluate the relative performance of different farming systems on a regional basis and changes in performance over time;
6. To regularly monitor and periodically update the above data base;
7. To establish and maintain contact with the farming community and to be able to respond promptly to the needs of producers;
8. To provide headquarters staff, agri-business, and extension field staff with accurate and comprehensive resource information.

The Study Sample

The Vermilion Region (North East Region) is predominantly a mixed farming area. Usually, farmers in this area undertake complementary enterprises in order to maximize their farming income. The most common enterprise mix used is that of either grain and cattle or grain and hogs. According to the 1981 Census[1], there were 9,999 farms in the Vermilion Region with an average acreage of 751 acres and an average value of farm sales of $44,750. As well, approximately 25 per cent of the farms in this region had farm sales in excess of $50,000. As to the classification of farms there were 3,256 "small grain" farms, 2,352 cattle farms and 1,358 wheat farms, all of which reported farm sales in excess of $2,500.

Participants for the project were selected on the basis of their main farming enterprise. To ensure that all of the twelve agricultural districts in the Vermilion Region were well represented, the Regional Farm Economist and District Agriculturists were asked to select the participants for the desired enterprises. A total of 14 different enterprises were analyzed relative to the 1983 calendar year.

The following map indicates the area of study, and also the location of the agricultural district offices within the Vermilion Region.

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[1] 1981 Census of Agriculture for Alberta - Alberta Statistics Branch, November, 1982.

FIGURE 1: VERMILION REGION

As many as three personal visits were necessary by some participants to record the data required for a complete analysis. Participants retained on study from previous years were much easier to analyze as their investment and inventory data were already established and only required up-dating. The final visit occurred in the early part of 1984 to record total annual farm expenditures and receipts for 1983.

The questionnaire which was used to gather the information contained three sections. Section I was simply a record of all expenses and receipts for the farm and was very similar to the information required for income tax purposes. Section II was designed to record data specific to each enterprise and essentially relied on the participant to best allocate his total farm expenses and receipts. Section III involved the recording of physical and financial data specific to each enterprise that was not recorded in Sections I and II.

Method of Analysis

All costs and returns data presented in this report are on a per unit of production basis. For example, information for grain production is on a per acre and per bushel basis while livestock is on a per head sold basis. The costs shown in the summary pages were calculated for each category of expense by dividing the total of all expenses by the total number of units of production. For example, the fertilizer expense for wheat grown on five farms is calculated by adding the total fertilizer expense for each farm, and then dividing by the total wheat acreage for the five farms. Thus, the costs and returns were weighted on a per unit of production basis rather than calculated using the simple average approach. In some cases, certain cost items were not incurred in an individual operation and this was accounted for in the method used in determining the average costs for each acre and animal unit on study.

Receipts: Returns for each enterprise represented the actual figures recorded for income tax purposes. However, the total value of the crop grown during the study year had to be estimated as the total harvest is not completely sold until sometime during the next calendar year.

Livestock receipts coincided directly with the amounts recorded for livestock sales. In many instances, livestock producers were either in an expansionary or liquidating phase and as such cash receipts would not truly represent an average year of livestock production. To overcome this, the herd was valued at the beginning as well as at the end of the year and recorded as the livestock inventory change in the receipts

section, thereby lending to a more accurate assessment of the livestock operation.

Labour Costs: A majority of the study participants relied on hired part-time labour to perform some of the necessary farming operations. Total labour costs as reported in the year-end statement were allocated to the various enterprises on the farm by the participants themselves. The operator's labour was valued at an amount comparable to that required to hire a skilled farm labourer. The labour provided by the operator's wife represented the work that she actually did for a given enterprise. Child labour which was quite common in livestock operations was valued below the minimum wage rate. Hired labour was also allocated in a similar way by the operator as he was most familiar with what the hired man was doing.

Material Costs: Most supplies used in grain and livestock production were bought during the production year and recorded as such in the year-end statement. However, it was necessary to record the inventory of many inputs such as fertilizer, seed, and chemicals, as these inputs might have been purchased from the previous year for use in the production year under study. An attempt was made to accurately monitor all costs of inputs used during the twelve month production period, regardless of when purchased. Home-grown seed and feed were valued at market prices and entered as such in the operating cost section of the enterprise analysis.

Miscellaneous Costs: Property taxes, insurance, utilities, etc. were valued at their actual costs and allocated to each enterprise by the study participant. Included as well in this category of expense were the purchase of small tools, accounting and legal fees, and building repairs.

Machine Operating Costs: Machine operation costs included repairs, fuel, lubrication and insurance expenses. Machine operating costs were categorized into various classes (to allow for easier allocation to a specific enterprise), and included farm power machinery, general crop machinery, haying machinery, specialty crop machinery, dairy and beef equipment, swine equipment, poultry equipment, general livestock equipment, and miscellaneous livestock equipment. Also, many of the study participants provided the cost of fuel and repairs for car and power machinery.

Investment: Study participants indicated the market value of all investment items and also the amount of liabilities held in the form of long term, intermediate, and short term loans. With this information, the equity position was established and a long term percentage rate of return of 7.0 per cent was applied to arrive at an opportunity cost on the operator's investment. Opportunity costs are indicated in Section C of the costs and returns tables and together with the operating costs, long term interest paid, and the value of unpaid labour make up the total production costs.

The depreciation rate for each category of investment was established by the study participant. As indicated earlier, machines were grouped into various categories in order to ease the task of allocating the operating and investment costs. This approach also permitted the participant to use a suitable depreciation rate for each category of farm equipment. An allowance for depreciation on building improvements and machinery is indicated in the Operating Cost Section of the enterprise report.

SECTION II

SUMMARY OF COSTS AND RETURNS - CROPS

This section provides detailed information on the average costs and returns for the various crops analyzed in the Vermilion Region 1. Two (2) of the 36 farms on study did not provide any costs and returns data on crop production. As in the previous years of study, barley was the most extensively grown cereal grain. It was grown by 76 per cent of the participants who had crop enterprises. Costs and returns for wheat production were reported by 69 per cent of the farms in 1983. Canola was also grown extensively by the study participants.

The data provided in Tables 6 to 12 are divided into four sections. Section A provides information relating to returns. Acreage per farm is simply the average size of the crop grown by study participants in a particular group. The yield per acre is a weighted average for the acres under study. Receipts per acre include an estimated total return for the crop and also miscellaneous crop receipts such as insurance and stabilization payments, value of aftermath, patronage payments, etc. Receipts per acre and receipts per bushel or ton are shown for comparison.

Section B presents the operating cost data which basically include all "out-of-pocket" costs and an allowance for depreciation. Most participants have expressed an interest in knowing their operating cost for each bushel or ton produced as it can be interpreted as a short-run breakeven price required to cover their cost of production.

Section C indicates the total cost of production on a per acre and per unit of production basis. Total operating cost, plus an opportunity cost on the equity portion of investment, plus long term interest paid plus unpaid family labour equal total production cost. Any income received over and above the total production cost is a return to management or profit.

Section D provides a summary of the costs and returns for a given crop. The return over operating costs is usually the figure that is referred to when choosing among different crops. Costs which are not included in the operating cost section may be considered as farm overhead

costs and may not always be considered in decision making. Total investment and labour as used by an enterprise are also indicated in Section D and are most useful for management purposes.

Tables 3, 4 and 5 provide summaries of the costs and returns for the nine crops studied in the Vermilion Region. A cost comparison by land tenure (owned land versus rented land) is provided for barley, wheat, canola and oats. The cost structure for grain production on rented land differs from that on owned land as rented land cost is a cash item and is in all cases lower than the non-cash imputed opportunity cost associated with owned land. Assuming similar yields for both types of land tenure, higher operating costs but lower total production costs per bushel can be anticipated for rented land versus owned land.

With the high cost of machinery many farmers have turned to renting land to either justify the purchase of farm equipment or to increase their overall farm income. Secondly, with land being the most expensive input, many operators have used their limited money supply for buying equipment and turned to cash rent or crop share arrangements. Generally speaking, total production cost per unit of production is lower on rented land since the cash rent/crop share value is lower than the interest cost charged on the market value of owned land. However, the cash costs which include the cash rent/crop share are higher on a per unit of production basis for rented land compared to owned land.

With respect to the four major crops grown in the Vermilion Region, namely wheat, barley, canola and oats, 1983 yields were below the average reported for 1982. Feedgrain and canola prices as reported by the participants were higher in 1983 relative to those received during the 1980-1982 period. It is important to note that yields were reported to be lower on rented land versus owned land for all the main crops studied. Possible reasons for this are:

1. Less use of fertilizers and chemicals on rented land;
2. More timely field operations on owned land;
3. Varying cultural practices by different tenants over time;
4. Tendency to intensify management and cultural skills on owned land versus rented;
5. Generally, due to the unfamiliarity with newly acquired rented land, management "know hows" are not optimized.

Operating costs per acre for wheat, barley, and canola grown on owned land were comparable averaging $93.11 per acre (Table 3). With the cost of cash rent/crop share being included in the operating cost section, one would expect significantly higher operating costs associated with grain/oilseed production on rented land as compared to owned land. This was not the case with barley grown on owned land as 27 farms with an average of 166.48 acres reported operating costs of $92.49 per acre while five farms with an average of 525 acres of barley on rented land had operating costs of $93.96 per acre. The benefits of larger scale operations becomes evident in this comparison as the $20.44 cash rent/crop share cost is practically offset by lower costs for materials, machine operation and depreciation costs, insurance, and property taxes (Refer to Table 5). The operating cost for wheat and canola on rented land averaged $119.84 per acre.

The remaining crops studied had operating costs ranging from $37.80 per acre for hay to $81.53 per acre for silage production. Operating costs per acre for summerfallow averaged $32.43 on owned land and was viewed by many farmers as crucial in deciding their rotation, especially, whether to continuous crop or fallow crop. Depending upon the area in which the farm is located and the management ability of the producer these costs may or may not be offset by the higher yields for crops grown on summerfallow. It should be pointed out that costs and returns by land tenure were not available for oats, mixed grains, silage, greenfeed and hay.

The return over operating costs in 1983 for all crops surveyed ranged from $17.47 per acre for hay to $124.56 for mixed grain production land. As to the three main crops grown on rented land in the Vermilion Region, returns over operating costs were $36.30, $27.55 and $27.16 per acre for barley, wheat, and canola, respectively. Due to the lower operating capital requirement for crop production on owned land, returns over operating costs were higher ranging from $41.35 per acre for barley to $70.14 per acre for wheat.

Total production costs include the operating costs, an opportunity cost on the operator's equity portion of investment, interest paid on investment items, and a value for the operator's and family labour. If returns are short of covering these costs the operator will be forced to

take a lower rate of return on his investment and labour, thus, the need to shift his resources to more profitable activities in the long-run. However, if the total production cost is covered the residual or profit can be interpreted as the amount remaining to compensate the operator for his risk(s) and management ability.

The crops surveyed in 1983 which had sufficient returns to cover total production costs were barley grown on rented land and mixed grain which reported a return to management of $5.01 per acre and $91.33 per acre, respectively. The cost advantages for barley grown on rented land can be seen quite clearly in the area of investment and is largely due to the fact that only five farms participated, all of which are relatively large. The other enterprises had negative returns to management ranging from -$5.17 per acre for canola to -$62.41 for silage.

Table 1 indicates the investment per acre for crops grown on owned land in the Vermilion Region in 1983. Items included under investment were land, power and general machinery, buildings and improvements. Investment was determined based on market value. In the case of land investment both the operator's and landlord's portions were taken into account.

TABLE 1: SUMMARY OF INVESTMENT FOR CROPS GROWN ON OWNED LAND - 1983

CROP	LAND	POWER MACHINERY	GENERAL MACHINERY	BUILDINGS & IMPROVEMENTS	TOTAL
			$ per acre		
Barley	617.16	91.24	66.20	41.92	816.52
Wheat	591.88	109.59	65.01	48.94	815.42
Canola	604.70	120.05	64.28	45.52	834.55
Oats	643.10	85.77	73.50	28.63	831.00
Summerfallow	590.01	66.51	30.60	26.64	713.76
Mixed Grain	546.94	33.00	76.28	58.10	714.32
Greenfeed	467.10	58.81	74.25	33.93	634.09
Hay	562.66	50.07	56.84	39.93	709.49
Silage	695.34	97.26	70.11	151.86	1014.57

With respect to labour use study participants indicated their total labour input for each enterprise on the farm. This amount was subsequently allocated to the hired man, the operator, and his family. Table 2 shows the total labour requirement for each crop analyzed. With refer-

ence to barley, wheat and canola, the average cropped acre on owned land required 2.83 hours of labour at an average cost of $19.35 per acre in comparison to 2.38 hours of labour at an average cost of $15.84 per acre on rented land.

Presented in Tables 6 to 10 inclusive are the average costs and returns for all crops studied in the Vermilion Region. A breakdown of the total operating costs is shown as many participants are interested in comparing specific cost items such as cash rent, crop share, fuel and repair, hired labour, etc., on a per acre basis over time.

TABLE 2: LABOUR REQUIREMENT FOR CROPS SURVEYED IN THE VERMILION REGION - 1983

CROP	HOURS PER ACRE	COST ($) PER ACRE
Barley - Owned	2.95	19.00
Barley - Rented	2.49	15.35
Wheat - Owned	2.82	20.68
Wheat - Rented	2.39	17.32
Canola - Owned	2.71	18.36
Canola - Rented	2.26	14.85
Oats	2.39	16.99
Summerfallow - Owned	1.64	12.28
Mixed Grain	4.56	24.48
Greenfeed	2.50	15.86
Hay	3.14	18.80
Silage	2.51	16.07

TABLE 3: SUMMARY OF COSTS AND RETURNS FOR CROPS SURVEYED - 1983 VERMILION REGION

	Barley		Wheat		Canola	
	Owned	Rented	Owned	Rented	Owned	Rented
A. INCOME						
Number of Farms	27	5	23	11	19	11
Average Acreage	166.48	525.00	232.83	170.50	243.00	277.73
Yield (Bu/Acre)	50.71	49.53	35.04	33.00	19.84	17.10
RECEIPTS ($/Acre)	133.84	130.26	159.42	146.30	165.53	148.09
	- - - - - - - - - - - - - - - - - $ Per Acre - - - - - - - - - - - - -					
B. PRODUCTION COSTS						
Material Cost	34.49	29.78	30.56	35.33	36.84	39.63
Machine Operating	16.52	13.08	17.62	15.74	15.77	15.14
Miscellaneous	21.29	34.98	19.31	42.09	22.06	48.02
TOTAL CASH COST	72.30	77.84	67.49	93.16	74.67	102.79
Depreciation	20.19	16.12	21.79	25.59	22.88	18.14
TOTAL OPERATING COST	92.49	93.96	89.28	118.75	97.55	120.93
Interest on Equity	36.95	4.04	46.76	15.07	43.67	7.84
Long Term Interest Paid	16.97	16.36	17.21	8.35	16.53	12.95
Unpaid Labour	16.84	10.88	16.43	14.36	15.34	11.55
TOTAL PRODUCTION COST	163.26	125.25	169.68	156.53	173.08	153.26
C. MANAGEMENT FACTORS						
Return Over Operating Costs	41.35	36.30	70.14	27.55	67.98	27.16
Return To Management	-29.42	5.01	-10.26	-10.23	-7.56	-5.17
Break-Even Yield To Cover:						
- Cash Cost (Bushels/Acre)	27.39	29.60	14.83	21.03	8.95	11.87
- Operating Cost (Bushels/Acre)	35.03	35.73	19.62	26.81	11.70	13.96
- Total Production Cost (Bushels/Acre)	61.84	47.62	37.29	35.33	20.75	17.70

TABLE 3 CONT'D: SUMMARY OF COSTS AND RETURNS FOR CROPS SURVEYED - 1983 VERMILION REGION

	Oats	Mixed Grain	Summerfallow Owned	Hay	Greenfeed	Silage
A. INCOME						
Number of Farms	8	4	20	21	9	8
Average Acreage	96.25	51.75	185.45	87.52	103.00	111.88
Yield (Bu/Acre)	78.24	74.49	-	1.47	1.71	3.93
RECEIPTS ($/Acre)	131.50	193.98	1.95	70.10	79.51	104.98
	- - - - - - - - - - - - - - - - $ Per Acre - - - - - - - - - - - - - - - -					
B. PRODUCTION COSTS						
Material Cost	26.72	19.80	-	6.21	16.95	15.46
Machine Operating	15.66	13.03	9.31	13.91	12.18	20.35
Miscellaneous	18.70	21.92	11.13	17.68	16.47	19.12
TOTAL CASH COST	61.08	54.75	20.44	37.80	45.60	54.93
Depreciation	18.84	14.67	11.99	14.83	16.77	26.60
TOTAL OPERATING COST	79.92	69.42	32.43	52.63	62.37	81.53
Interest on Equity	46.13	10.11	37.89	24.16	30.99	39.19
Long Term Interest Paid	9.26	2.46	8.00	12.31	15.86	33.69
Unpaid Labour	14.14	20.65	10.94	16.50	15.10	12.97
TOTAL PRODUCTION COST	149.46	102.64	89.25	105.60	124.32	167.39
C. MANAGEMENT FACTORS						
Return Over Operating Cost	51.58	124.56	-30.47	17.47	19.93	23.46
Return To Management	-17.96	91.33	-87.30	-35.51	-42.02	-62.41
Break-Even Yield To Cover:						
- Cash Cost (Bushels/Acre)	36.36	21.06	-	0.79	0.98	2.06
- Operating Cost (Bushels/Acre)	47.57	26.70	-	1.10	1.34	3.05
- Total Production Cost (Bushels/Acre)	88.96	39.48	-	2.21	2.67	6.27

TABLE 3: SUMMARY OF COSTS AND RETURNS FOR WHEAT PRODUCTION - 1983

		OWNED		RENTED	
A.	INCOME				
	Number of Farms	23		11	
	Acreage Per Farm	232.83		170.50	
	Yield (Bu/Acre)	35.04		33.00	
		- - - - - - - - - $/Acre - - - - - - - - -			
	Total Value	155.18		142.07	
	Crop Insurance Receipts	1.43		2.05	
	Miscellaneous Receipts	2.81		2.17	
	Total Receipts	159.42	4.55/Bu	146.30	4.43/Bu
B.	OPERATING COSTS				
	Fertilizer	17.26		20.80	
	Chemicals	6.62		7.42	
	Seed Purchased	2.26		0.66	
	Home-Grown Seed	4.42		6.45	
	Custom Work Hired	1.79		0.37	
	Crop and Hail Insurance	3.68		1.63	
	Cash Rent and Crop Share			32.17	
	Machinery Operating Costs	17.62		15.74	
	Miscellaneous Equipment	0.80		0.21	
	Building Repairs	0.40		0.08	
	Interest on Operating Capital	1.76		0.78	
	Utilities	1.65		0.95	
	Other Insurance	0.79		0.47	
	Property Taxes	2.39		0.72	
	Accounting and Legal Fees	0.48		0.17	
	Other	0.65		1.01	
	Hired Labour	4.25		2.96	
	Tools Purchased	0.68		0.57	
	Depreciation	21.79		25.59	
	Total Operating Costs	89.28	2.55/Bu	118.75	3.60/Bu
C.	PRODUCTION COSTS				
	Operating Costs	89.28		118.75	
	Interest on Equity - Owned Land	34.45			
	Interest on Equity - Improvements	3.02		2.21	
	Interest on Equity - Machinery	8.98		12.55	
	Interest on Equity - Supplies	0.31		0.31	
	Long Term Interest Paid	17.21		8.35	
	Unpaid Labour	16.43		14.36	
	Total production Costs	169.68	4.84/Bu	156.53	4.74/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	70.14	2.00/Bu	27.55	0.83/Bu
	Return To Management	-10.26	-0.29/Bu	-10.23	-0.31/Bu
	Land Investment	591.88		589.57	
	Building and Machinery Investment	223.54		249.79	
	Labour Hours (Per Acre)	2.82		2.39	

TABLE 5: SUMMARY OF COSTS AND RETURNS FOR BARLEY PRODUCTION - 1983

		OWNED		RENTED	
A.	INCOME				
	Number of Farms	27		5	
	Acreage Per Farm	166.48		525.00	
	Yield (Bu/Acre)	50.71		49.53	
		- - - - - - - - - $/Acre - - - - - - - - -			
	Total Value	126.37		123.13	
	Crop Insurance Receipts	3.02		4.02	
	Miscellaneous Receipts	4.45		3.12	
	Total Receipts	133.84	2.64/Bu	130.32	2.63/Bu
B.	OPERATING COSTS				
	Fertilizer	20.55		22.15	
	Chemicals	7.58		2.24	
	Seed Purchased	2.35		4.04	
	Home-Grown Seed	4.01		1.35	
	Custom Work Hired	5.00		1.41	
	Crop and Hail Insurance	1.78		3.43	
	Cash Rent and Crop Share			20.44	
	Machinery Operating Costs	16.52		13.08	
	Miscellaneous Equipment	0.92			
	Building Repairs	0.63		0.30	
	Interest on Operating Capital	2.69		0.97	
	Utilities	1.71		0.57	
	Other Insurance	1.10		0.84	
	Property Taxes	2.58			
	Accounting and Legal Fees	0.49		0.47	
	Other	1.61		1.96	
	Hired Labour	2.16		4.47	
	Tools Purchased	0.64		0.12	
	Depreciation	20.19		16.12	
	Total Operating Costs	92.49	1.82/Bu	93.96	1.90/Bu
C.	PRODUCTION COSTS				
	Operating Costs	92.49		93.96	
	Interest on Equity - Owned Land	27.02			
	Interest on Equity - Improvements	2.31		0.79	
	Interest on Equity - Machinery	7.37		3.24	
	Interest on Equity - Supplies	0.25		0.01	
	Long Term Interest Paid	16.97		16.36	
	Unpaid Labour	16.84		10.88	
	Total production Costs	163.26	3.22/Bu	125.25	2.53/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	41.35	0.82/Bu	36.30	0.73/Bu
	Return To Management	-29.42	-0.58/Bu	5.01	0.10/Bu
	Land Investment	617.16		564.21	
	Building and Machinery Investment	199.27		143.50	
	Labour Hours (Per Acre)	2.95		2.49	

TABLE 6: SUMMARY OF COSTS AND RETURNS FOR CANOLA PRODUCTION - 1983

		OWNED		RENTED	
A.	INCOME				
	Number of Farms	19		11	
	Acreage Per Farm	243.00		277.73	
	Yield (Bu/Acre)	19.84		17.10	
		- - - - - - - - - $/Acre - - - - - - - - -			
	Total Value	153.58		127.02	
	Crop Insurance Receipts	8.21		16.26	
	Miscellaneous Receipts	3.73		4.81	
	Total Receipts	165.53	8.34/Bu	148.09	8.66/Bu
B.	OPERATING COSTS				
	Fertilizer	18.09		21.22	
	Chemicals	14.99		14.92	
	Seed Purchased	3.63		2.84	
	Home-Grown Seed	0.13		0.65	
	Custom Work Hired	4.41		4.97	
	Crop and Hail Insurance	3.89		4.51	
	Cash Rent and Crop Share			28.39	
	Machinery Operating Costs	15.77		15.14	
	Miscellaneous Equipment	0.90		0.12	
	Building Repairs	0.54		0.32	
	Interest on Operating Capital	1.91		1.80	
	Utilities	1.52		0.94	
	Other Insurance	0.94		0.92	
	Property Taxes	2.85		0.67	
	Accounting and Legal Fees	0.37		0.42	
	Other	1.15		1.37	
	Hired Labour	3.02		3.30	
	Tools Purchased	0.57		0.28	
	Depreciation	22.88		18.14	
	Total Operating Costs	97.55	4.92/Bu	120.93	7.07/Bu
C.	PRODUCTION COSTS				
	Operating Costs	97.55		120.93	
	Interest on Equity - Owned Land	31.10			
	Interest on Equity - Improvements	2.91		1.46	
	Interest on Equity - Machinery	9.45		6.14	
	Interest on Equity - Supplies	0.21		0.24	
	Long Term Interest Paid	16.53		12.95	
	Unpaid Labour	15.34		11.55	
	Total production Costs	173.08	8.72/Bu	153.26	8.96/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	67.98	3.43/Bu	27.16	1.59/Bu
	Return To Management	-7.56	-0.38/Bu	-5.17	-0.30/Bu
	Land Investment	604.20		591.96	
	Building and Machinery Investment	229.85		172.43	
	Labour Hours (Per Acre)	2.71		2.26	

TABLE 7: SUMMARY OF COSTS AND RETURNS FOR OATS AND MIXED GRAIN PRODUCTION - 1983

		OATS		MIXED GRAIN	
A.	INCOME				
	Number of Farms	8		4	
	Acreage Per Farm	96.25		51.75	
	Yield (Bu/Acre)	78.24		74.49	
			$/Acre		
	Total Value	129.66		192.46	
	Crop Insurance Receipts				
	Miscellaneous Receipts	1.84		1.51	
	Total Receipts	131.50	1.68/Bu	193.98	2.60/Bu
B.	OPERATING COSTS				
	Fertilizer	19.42		13.55	
	Chemicals	1.04		1.04	
	Seed Purchased	4.48		0.78	
	Home-Grown Seed	1.78		4.43	
	Custom Work Hired	0.93			
	Crop and Hail Insurance	0.67		1.77	
	Cash Rent and Crop Share	2.70		6.25	
	Machinery Operating Costs	15.66		13.03	
	Miscellaneous Equipment	0.22			
	Building Repairs	0.68			
	Interest on Operating Capital	2.71		3.52	
	Utilities	1.46		1.11	
	Other Insurance	0.39		0.73	
	Property Taxes	2.32		1.36	
	Accounting and Legal Fees	0.64		0.13	
	Other	2.71		1.26	
	Hired Labour	2.85		3.83	
	Tools Purchased	0.45		1.96	
	Depreciation	18.84		14.67	
	Total Operating Costs	79.92	1.02/Bu	69.42	0.93/Bu
C.	PRODUCTION COSTS				
	Operating Costs	79.92		69.42	
	Interest on Equity - Owned Land	35.08		7.73	
	Interest on Equity - Improvements	1.90		0.46	
	Interest on Equity - Machinery	8.45		1.87	
	Interest on Equity - Supplies	0.70		0.05	
	Long Term Interest Paid	9.26		2.46	
	Unpaid Labour	14.14		20.65	
	Total production Costs	149.46	1.91/Bu	102.64	1.38/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	51.58	0.66/Bu	124.56	1.67/Bu
	Return To Management	-17.96	-0.23/Bu	91.33	1.23/Bu
	Land Investment	643.10		546.94	
	Building and Machinery Investment	187.90		167.38	
	Labour Hours (Per Acre)	2.39		4.56	

TABLE 8: SUMMARY OF COSTS AND RETURNS FOR SUMMERFALLOW - 1983

		OWNED
A.	INCOME	
	Number of Farms	20
	Acreage Per Farm	185.45
	Yield (Bu/Acre)	
		- - - - - - $/Acre - - - - - -
	Total Value	
	Crop Insurance Receipts	
	Miscellaneous Receipts	1.95
	Total Receipts	1.95
B.	OPERATING COSTS	
	Fertilizer	
	Chemicals	
	Seed Purchased	
	Home-Grown Seed	
	Custom Work Hired	1.16
	Crop and Hail Insurance	
	Cash Rent and Crop Share	
	Machinery Operating Costs	9.31
	Miscellaneous Equipment	0.31
	Building Repairs	0.24
	Interest on Operating Capital	1.07
	Utilities	0.92
	Other Insurance	0.35
	Property Taxes	1.87
	Accounting and Legal Fees	0.27
	Other	2.24
	Hired Labour	1.34
	Tools Purchased	0.37
	Depreciation	11.99
	Total Operating Costs	32.43
C.	PRODUCTION COSTS	
	Operating Costs	32.43
	Interest on Equity - Owned Land	30.32
	Interest on Equity - Improvements	1.74
	Interest on Equity - Machinery	5.67
	Interest on Equity - Supplies	0.16
	Long Term Interest Paid	8.00
	Unpaid Labour	10.94
	Total production Costs	89.25
D.	MANAGEMENT FACTORS	
	Return Over Operating Costs	-30.47
	Return To Management	-87.30
	Land Investment	590.01
	Building and Machinery Investment	123.75
	Labour Hours (Per Acre)	1.64

TABLE 9: SUMMARY OF COSTS AND RETURNS FOR FORAGE PRODUCTION - 1983

		GREENFEED		SILAGE	
A.	INCOME				
	Number of Farms	9		8	
	Acreage Per Farm	103.00		111.88	
	Yield (Ton/Acre)	1.71		3.93	
		- - - - - - - - -	$/Acre	- - - - - - - - -	
	Total Value	79.51		103.69	
	Crop Insurance Receipts				
	Miscellaneous Receipts	2.79		1.30	
	Total Receipts	82.30	48.19/Ton	104.98	26.69/Ton
B.	OPERATING COSTS				
	Fertilizer	8.78		9.14	
	Chemicals	2.89		0.67	
	Seed Purchased	3.54		4.40	
	Home-Grown Seed	1.74		1.25	
	Custom Work Hired	1.05		2.23	
	Crop and Hail Insurance				
	Cash Rent and Crop Share	5.46			
	Machinery Operating Costs	12.18		20.35	
	Miscellaneous Equipment	1.21		4.86	
	Building Repairs	0.66		0.22	
	Interest on Operating Capital	2.36		1.24	
	Utilities	0.91		1.18	
	Other Insurance	0.93		1.00	
	Property Taxes	1.54		3.18	
	Accounting and Legal Fees	0.26		0.63	
	Other	0.98		1.30	
	Hired Labour	0.76		3.10	
	Tools Purchased	0.39		0.19	
	Depreciation	16.77		26.60	
	Total Operating Costs	62.37	36.52/Ton	81.53	20.73/Ton
C.	PRODUCTION COSTS				
	Operating Costs	62.37		81.53	
	Interest on Equity - Owned Land	22.55		32.44	
	Interest on Equity - Improvements	2.35		1.61	
	Interest on Equity - Machinery	6.04		4.96	
	Interest on Equity - Supplies	0.05		0.18	
	Long Term Interest Paid	15.86		33.69	
	Unpaid Labour	15.10		12.97	
	Total Production Costs	124.32	72.79/Ton	167.39	42.56/Ton
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	19.93	11.67/Ton	23.46	5.96/Ton
	Return To Management	-42.02	-24.60/Ton	-62.41	-15.87/Ton
	Land Investment	467.10		695.34	
	Building and Machinery Investment	166.99		319.23	
	Labour Hours (Per Acre)	2.50		2.51	

TABLE 10: SUMMARY OF COSTS AND RETURNS FOR HAY PRODUCTION - 1983

A.	INCOME		
	Number of Farms	21	
	Acreage Per Farm	87.52	
	Yield (Ton/Acre)	1.47	
		- - - - - - - $/Acre - - - - - - -	
	Total Value	65.88	
	Crop Insurance Receipts		
	Miscellaneous Receipts	4.21	
	Total Receipts	70.10	47.57/Ton
B.	OPERATING COSTS		
	Fertilizer	6.18	
	Chemicals	0.03	
	Seed Purchased		
	Home-Grown Seed		
	Custom Work Hired	1.01	
	Crop and Hail Insurance		
	Cash Rent and Crop Share	4.27	
	Machinery Operating Costs	13.91	
	Miscellaneous Equipment	0.05	
	Building Repairs	0.86	
	Interest on Operating Capital	2.92	
	Utilities	1.31	
	Other Insurance	1.11	
	Property Taxes	2.08	
	Accounting and Legal Fees	0.37	
	Other	0.80	
	Hired Labour	2.30	
	Tools Purchased	0.59	
	Depreciation	14.83	
	Total Operating Costs	52.63	35.71/Ton
C.	PRODUCTION COSTS		
	Operating Costs	52.63	
	Interest on Equity - Owned Land	18.21	
	Interest on Equity - Improvements	1.62	
	Interest on Equity - Machinery	4.22	
	Interest on Equity - Supplies	0.11	
	Long Term Interest Paid	12.31	
	Unpaid Labour	16.50	
	Total production Costs	105.60	71.66/Ton
D.	MANAGEMENT FACTORS		
	Return Over Operating Costs	17.47	11.85/Ton
	Return To Management	-35.51	-24.09/Ton
	Land Investment	562.66	
	Building and Machinery Investment	146.83	
	Labour Hours (Per Acre)	3.14	

SECTION III

SUMMARY OF COSTS AND RETURNS - LIVESTOCK

The latest census indicates that the second largest source of income for farms in the Vermilion Region was from the sale of cattle. Livestock production on mixed farms is complementary in nature with grain production. That is, livestock feed requirements such as hay and grain, aftermath pasture, and marginal grazing are provided by the grain enterprise which otherwise may not be marketable. This section provides detailed information on the costs and returns for the average livestock enterprise analyzed in the Vermilion Region.

The data provided in Tables 12-15 are arranged in six sections. Section A provides information that is related to livestock receipts. Size of the basic herd is indicated only for those enterprises which had breeding stock. Also shown is the number of head sold which is used as the divisor in reporting the costs and returns data on a per head basis. Inventory adjustment which may be positive or negative is used to reflect the change in value of the livestock on the farm from the beginning to the end of the twelve month study period.

Section B lists the various categories of operating costs. Equipment expenses include the repairs and fuel costs that were allocated to the livestock enterprises. Repairs and maintenance costs of livestock facilities and wells are indicated on a per head sold basis. These figures were taken from the year-end statement and allocated accordingly to the various livestock enterprises. Hired labour costs represent the actual amount of cash that was spent for full and part-time help. Livestock that was transferred in from another livestock enterprise rather than purchased for cash was valued at fair market value. Home-grown feed was separated from purchased feed and was also valued at fair market value. Interest on operating capital was based on the allocation of operating interest actually paid during the twelve month period. Depreciation of fixed assets are also included in the operating cost section.

Section C completes the production cost section by accounting for overhead costs and unpaid labour. Interest on operator's equity was determined using the market value for the different investment items and applying an interest rate of seven per cent. Long term interest paid on loans and a valuation of unpaid family labour complete the production cost section.

Section D attempts to evaluate the overall performance of the livestock operation. Of critical inportance is the return over operating costs and is usually the figure that is referred to when choosing among different farming alternatives. Costs which are not included under the heading of operating cost may be considered as farm overhead and may not always be taken into account when makiny decisions. As well, total labour as used by a specific enterprise is indicated in this section and is useful from a management point of view.

Of interest to most producers is the total investment. Such information is shown in Section E. Included in investment were land (building and feeding site), breeding herd, equipment and buildings and improvements. Pasture land was not allocated to the livestock enterprise. Instead, all land used for grazing purposes was converted to an animal unit month (A.U.M.) basis and a fair market value per A.U.M. was applied for each specific type of grazing to arrive at a cost.

In the 1979 study, many of the livestock participants expressed an interest in knowing what feed inputs were used in the ration for the average livestock operations so as to allow for comparison. To meet this requirement, Section F has been included and provides to some detail the feeding inputs on a total quantity, total cost, and cost per head sold basis. Home-grown feed costs were separated from purchased feed costs and are shown in Section B under Operating Costs.

Due to the limited number of cattle producers participating in this analysis (16 in number), the reader is advised to exercise some judgement when attempting to interpret the costs and returns data presented. The three main types of cattle enterprises examined were: cow-calf (eight reports), cow-calf finishing (five reports), and cattle feeding (three reports). For each type of cattle operation participants were asked to indicate the number of cows exposed to breeding, the number of calves weaned and their average weight.

Table 11 provides a summary of the costs and returns for the three types of cattle enterprises studied in the Vermilion Region. For the 13 farms having a basic herd an average of 64.3 cows was reported. Percentage of calves weaned ranged from 76 per cent to 98.5 per cent with the average being 89 per cent. Weight of weaned calves ranged from 354 to 625 pounds with the average at 522 pounds.

Costs and returns data for the average cow-calf, cow-calf finish, and cattle feeding enterprises are presented in Tables 12, 13, and 14, respectively. The income per head sold in 1983 ranged from $431.52 for the average cow-calf enterprise to $702.11 for the average cow-calf finish enterprise. Cash cost per head sold ranged from $199.05 for the cow-calf operation to $1055.88 for the cattle feeding enterprise. Return over cash cost ranged from $113.90 per head sold for the cattle feeding enterprise to a high of $357.33 for the cow-calf finish operation.

Operating cost ranged from $430.14 per head sold for the cow-calf enterprise to $1210.22 per head sold for the cattle feeding enterprise. Cash cost plus the value of home-grown feed and an allowance for depreciation equal total operating cost. None of the cattle enterprises surveyed in 1983 had sufficient income to cover their total operating costs. Return over operating cost ranged from -$32.30 for the cow-calf operation to -$276.68 for the cow-calf finishing operation on a per head sold basis. An observation that can be made from this analysis is that the returns realized by cattle producers in 1983 did not justify the market value that was attached to home-grown feed.

Feed cost still remains to be the major operating cost in livestock operations. For example, the cow-calf operation had an operating cost of $430.14 per head sold. Of this, $208.13 or 48.4 per cent was attributed to feed. Total production costs on a per head sold basis in 1983 ranged from $650.29 for the average cow-calf operation to $1366.55 for the average cow-calf finish operation. Operating costs plus the opportunity cost on investment, long term interest paid and unpaid labour equal total production cost. The difference between gross income and total production costs equals return to management or profit. Returns to management in 1983 ranged from -$155.11 for the cattle feeding operation to -$499.69 for the cow-calf finish operation on a per head sold basis. Labour hours

per head sold averaged 16.59, 18.44, and 6.10 for the cow-calf, cow-calf finish, and cattle feeding enterprises, respectively.

Presented in Table 15 are the costs and returns for farrow finish enterprises studied in the Vermilion region. A total of three hog operations were studied, all of which provided physical data as to the number of farrowings and piglets weaned. Piglets weaned per sow ranged from 13.95 to 17.16 per year (based on 2 litters per sow), with the average being 15.28. The number of sows on the average farm was 79.5 with the range being between 56 and 103 sows per farm.

Unlike the cattle operations, the average farrow to finish operation showed a positive return over operating costs of $29.28 per head sold, while total returns were short by $3.08 per head sold in covering all production costs. Alternatively put, total production costs were $125.20 while total returns were $122.12 per head sold. Approximately 70.1 per cent of the operating costs represented feed, 67.1 per cent of which was purchased rather than home-grown. On the average, 11.72 pigs were sold per sow for farrow-finish operations. Labour requirements per hog sold averaged 4.54 hours. Approximately 932 market hogs were sold by the average farrow-finish operation resulting in a return over operating costs of $27,274.32 or $29.28 per hog sold. This amount represents the operator's return to labour, management, and investment. If only cash costs are considered (operating costs less home-grown feed and depreciation), farrow-finish operators in 1983 had a return over cash costs of $59.83 per hog.

TABLE 11: SUMMARY OF COSTS AND RETURNS FOR CATTLE ENTERPRISES SURVEYED IN THE VERMILION REGION - 1983

		COW-CALF	COW-CALF FINISH	CATTLE FEEDING
A.	INCOME			
	Number of Farms	8	5	3
	Average Herd Size	56.14	72.40	-
	Number of Head Sold	63.43	72.20	106.67
	Average Weight Per Head Sold	612	1056	713.95
		- - - $ Per Head Sold - - -		
	Livestock Sales	431.52	702.11	600.90
	Inventory Adjustment	-33.69	163.65	568.88
	Miscellaneous Receipts		1.10	
	Gross Income	397.84	866.86	1169.78
B.	PRODUCTION COSTS			
	Purchased Feed	29.69	59.38	56.61
	Building, Fence Repairs	16.03	33.44	12.11
	Livestock Purchases	57.71	235.49	881.38
	Vet. and Medicine	6.24	23.47	12.56
	Hired Labour	3.77	18.75	12.13
	Operating Capital Interest Pd.	1.47	26.32	14.63
	Miscellaneous	84.14	112.68	66.46
	TOTAL CASH COST	199.05	509.53	1055.88
	Home-Grown Feed	178.44	575.44	124.98
	Depreciation	52.65	58.57	29.36
	TOTAL OPERATING COST	430.14	1143.54	1210.22
	Interest on Equity	74.86	93.15	60.06
	Long Term Interest Pd.	45.52	28.50	26.07
	Unpaid Labour	99.76	101.35	28.54
	TOTAL PRODUCTION COST	650.29	1366.55	1324.89
C.	Return Over Cash Cost	198.79	357.33	113.90
	Return Over Operating Cost	-32.30	-276.68	-40.43
	Return To Management	-252.45	-499.69	-155.11
	Labour Hours Per Head Sold	16.59	18.44	6.10

TABLE 12: COSTS AND RETURNS FOR COW-CALF ENTERPRISES - 1983
VERMILION REGION

		Group Average	Your Farm
A.	INCOME		
	Number of Farms	8	
	Herd Size (Head)	56.14	
	Number of Head Sold	63.43	
	Total Weight Produced (Cwt.)	332.51	
	Total Weight Sold (Cwt.)	388.34	
		- - - $ Per Head Sold - - -	
	Livestock Sales	431.52	
	Inventory Adjustment	-33.69	
	Miscellaneous Receipts		
	GROSS INCOME	397.84	
B.	OPERATING COSTS		
	Equipment - Fuel and Repairs	63.99	
	Miscellaneous Tools	1.09	
	Building Repairs	5.13	
	Fence and Well Repairs	10.90	
	Operating Capital Interest Pd.	1.47	
	Utilities	6.45	
	Insurance and Licenses	2.10	
	Property Taxes	2.83	
	Accounting and Legal	0.80	
	Hired Labour	3.77	
	Livestock Purchases	57.71	
	Vet. and Medicine	6.24	
	Custom Work Hired	3.65	
	Transporting and Marketing	2.48	
	Bedding and Supplies		
	Heating Fuel		
	Other	0.75	
	Home-Grown Feed	178.44	
	Purchased Feed	29.69	
	Depreciation - Improvements	11.12	
	Depreciation - Machinery	41.53	
	TOTAL OPERATING COST	430.14	
C.	PRODUCTION COSTS		
	Operating Costs	430.14	
	Int. on Equity - Land, Livestock	48.34	
	Int. on Equity - Improvements	10.73	
	Int. on Equity - Machinery & Supplies	15.79	
	Interest on Long Term Debt	45.52	
	Operator's Labour	95.79	
	Family Labour	3.97	
	TOTAL PRODUCTION COST	650.29	
D.	MANAGEMENT FACTORS		
	Return Over Operating Cost	-32.30	
	Return To Management	-252.45	
	LABOUR USED (HOURS)	16.59	

TABLE 12 (cont'd)

	Group Average			
			Investment Per Head Sold ($)	Your-Farm
E. INVESTMENT ITEMS				
Livestock and Supply Inventory			841.12	
Equipment			372.61	
Buildings and Improvements			191.34	
Land			217.68	
TOTAL INVESTMENT			1,622.75	
	Total Quantity Fed	Total Cost ($)	Cost Per Head Sold ($)	
F. HOME-GROWN FEED				
Wheat (Bushels)				
Oats (Bushels)	549.00	869.64	13.71	
Barley (Bushels)	341.86	851.01	13.42	
Other Grain (Cwt.)				
Tame Hay (Tons)	73.14	3,909.64	61.64	
Native Hay (Tons)	6.57	90.00	1.42	
Silage (Tons)	44.21	1,193.79	18.82	
Greenfeed (Tons)	23.43	1,171.43	18.47	
Straw (Tons)	62.57	1,051.43	16.58	
Native Pasture (Aums)	141.29	966.14	15.23	
Tame Pasture (Aums)	108.57	909.43	14.34	
Aftermath Pasture (Aums)	43.71	306.00	4.82	
TOTAL COST OF HOME-GROWN FEED		11,318.51	178.44	
PURCHASED FEED				
Grain (Cwt.)				
Grain (Cwt.)				
Supplement (Cwt.)	30.46	660.00	10.41	
Complete Feed (Cwt.)				
Hay (Tons)	5.24	250.29	3.95	
Silage (Tons)				
Greenfeed (Tons)	1.81	213.86	3.37	
Straw - Feed (Tons)				
Straw - Bedding (Tons)				
Native Pasture (Aums)	119.64	208.57	3.29	
Tame Pasture (Aums)	222.14	114.29	1.80	
Aftermath Pasture (Aums)				
Salt, Molasses, Etc.		436.29	6.88	
TOTAL COST OF PURCHASED FEED		1,883.29	29.69	
TOTAL FEED COSTS		13,201.79	208.14	

TABLE 13: COSTS AND RETURNS FOR COW-CALF FINISH ENTERPRISES - 1983
VERMILION REGION

	Group Average	Your Farm
A. INCOME		
Number of Farms	5	
Herd Size (Head)	72.40	
Number of Head Sold	72.20	
Total Weight Produced (Cwt.)	645.21	
Total Weight Sold (Cwt.)	762.26	
	- - - $ Per Head Sold - - - -	
Livestock Sales	702.11	
Inventory Adjustment	163.65	
Miscellaneous Receipts	1.10	
GROSS INCOME	866.86	
B. OPERATING COSTS		
Equipment - Fuel and Repairs	69.38	
Miscellaneous Tools	1.17	
Building Repairs	5.16	
Fence and Well Repairs	28.28	
Operating Capital Interest Pd.	26.32	
Utilities	7.26	
Insurance and Licenses	4.28	
Property Taxes	6.43	
Accounting and Legal	2.63	
Hired Labour	18.75	
Livestock Purchases	235.49	
Vet. and Medicine	23.47	
Custom Work Hired	16.62	
Transporting and Marketing		
Bedding and Supplies		
Heating Fuel	3.87	
Other	1.04	
Home-Grown Feed	575.44	
Purchased Feed	59.38	
Depreciation - Improvements	12.17	
Depreciation - Machinery	46.40	
TOTAL OPERATING COST	1,143.54	
C. PRODUCTION COSTS		
Operating Costs	1,143.54	
Int. on Equity - Land, Livestock	58.82	
Int. on Equity - Improvements	16.45	
Int. on Equity - Machinery & Supplies	17.88	
Interest on Long Term Debt	28.50	
Operator's Labour	92.16	
Family Labour	9.19	
TOTAL PRODUCTION COST	1,366.55	
D. MANAGEMENT FACTORS		
Return Over Operating Cost	-276.68	
Return To Management	-499.69	
LABOUR USED (HOURS)	18.44	

TABLE 13 (cont'd)

	Group Average			
			Investment Per Head Sold ($)	Your-Farm
E. INVESTMENT ITEMS				
Livestock and Supply Inventory			1,705.20	
Equipment			406.50	
Buildings and Improvements			227.93	
Land			81.72	
TOTAL INVESTMENT			2,421.35	
	Total Quantity Fed	Total Cost ($)	Cost Per Head Sold ($)	
F. HOME-GROWN FEED				
Wheat (Bushels)				
Oats (Bushels)	2,916.20	4,436.00	61.44	
Barley (Bushels)	2,763.00	5,856.70	81.12	
Other Grain (Cwt.)	970.00	6,596.00	91.36	
Tame Hay (Tons)	101.40	4,813.00	66.66	
Native Hay (Tons)	45.80	1,832.00	25.37	
Silage (Tons)	146.40	8,124.00	112.52	
Greenfeed (Tons)	100.40	4,346.80	60.20	
Straw (Tons)	106.20	2,294.00	31.77	
Native Pasture (Aums)	165.20	1,156.40	16.02	
Tame Pasture (Aums)	175.60	1,574.40	21.81	
Aftermath Pasture (Aums)	72.10	517.60	7.17	
TOTAL COST OF HOME-GROWN FEED		41,546.87	575.44	
PURCHASED FEED				
Grain (Cwt.)				
Grain (Cwt.)				
Supplement (Tons)	16.20	3,423.20	47.41	
Complete Feed (Tons)				
Hay (Tons)		161.60	2.24	
Silage (Tons)				
Greenfeed (Tons)				
Straw - Feed (Tons)				
Straw - Bedding (Tons)				
Native Pasture (Aums)	38.80	336.00	4.65	
Tame Pasture (Aums)	8.80	150.00	2.08	
Aftermath Pasture (Aums)				
Salt, Molasses, Etc.		216.40	3.00	
TOTAL COST OF PURCHASED FEED		4,287.20	59.38	
TOTAL FEED COSTS		45,834.07	634.82	

TABLE 14: COSTS AND RETURNS FOR CATTLE FEEDING ENTERPRISES - 1983
VERMILION REGION

		Group Average	Your Farm
A.	INCOME		
	Number of Farms	3	
	Herd Size (Head)		
	Number of Head Sold	106.67	
	Total Weight Produced (Cwt.)	349.58	
	Total Weight Sold (Cwt.)	761.57	
		- - - - - - - $ Per Head Sold - - - - - -	
	Livestock Sales	600.90	
	Inventory Adjustment	568.88	
	Miscellaneous Receipts		
	GROSS INCOME	1,169.78	
B.	OPERATING COSTS		
	Equipment - Fuel and Repairs	32.71	
	Miscellaneous Tools	0.31	
	Building Repairs	10.55	
	Fence and Well Repairs	1.56	
	Operating Capital Interest Pd.	14.63	
	Utilities	5.38	
	Insurance and Licenses	4.10	
	Property Taxes	0.05	
	Accounting and Legal	3.65	
	Hired Labour	12.13	
	Livestock Purchases	881.38	
	Vet. and Medicine	12.56	
	Custom Work Hired	4.83	
	Transporting and Marketing	2.19	
	Bedding and Supplies		
	Heating Fuel		
	Other	13.25	
	Home-Grown Feed	124.98	
	Purchased Feed	56.61	
	Depreciation - Improvements	6.81	
	Depreciation - Machinery	22.55	
	TOTAL OPERATING COST	1,210.22	
C.	PRODUCTION COSTS		
	Operating Costs	1,210.22	
	Int. on Equity - Land, Livestock	43.83	
	Int. on Equity - Improvements	8.29	
	Int. on Equity - Machinery & Supplies	7.94	
	Interest on Long Term Debt	26.07	
	Operator's Labour	28.54	
	Family Labour		
	TOTAL PRODUCTION COST	1,324.89	
D.	MANAGEMENT FACTORS		
	Return Over Operating Cost	-40.43	
	Return To Management	-155.11	
	LABOUR USED (HOURS)	6.10	

TABLE 14 (cont'd)

	Group Average			
			Investment Per Head Sold ($)	Your-Farm
E. INVESTMENT ITEMS				
Livestock and Supply Inventory			559.05	
Equipment			181.28	
Buildings and Improvements			126.37	
Land			68.75	
TOTAL INVESTMENT			935.45	
	Total Quantity Fed	Total Cost ($)	Cost Per Head Sold ($)	
F. HOME-GROWN FEED				
Wheat (Bushels)				
Oats (Bushels)	953.67	1,335.13	12.52	
Barley (Bushels)	5,107.33	7,718.33	72.36	
Other Grain (Cwt.)				
Tame Hay (Tons)	29.17	1,458.33	13.67	
Native Hay (Tons)				
Silage (Tons)	70.67	1,908.00	17.89	
Greenfeed (Tons)	3.33	133.33	1.25	
Straw (Tons)	14.17	283.33	2.66	
Native Pasture (Aums)	27.33	218.67	2.05	
Tame Pasture (Aums)	30.67	276.00	2.59	
Aftermath Pasture (Aums)				
TOTAL COST OF HOME-GROWN FEED		13,331.13	124.98	
PURCHASED FEED				
Grain (Cwt.)				
Grain (Cwt.)				
Supplement (Tons)	58.67	1,083.67	10.16	
Complete Feed (Tons)		4407.00	41.32	
Hay (Tons)				
Silage (Tons)				
Greenfeed (Tons)				
Straw - Feed (Tons)				
Straw - Bedding (Tons)				
Native Pasture (Aums)	62.67	491.33	4.61	
Tame Pasture (Aums)				
Aftermath Pasture (Aums)				
Salt, Molasses, Etc.		56.00	0.53	
TOTAL COST OF PURCHASED FEED		6,038.00	56.61	
TOTAL FEED COSTS		19,369.13	181.59	

TABLE 15: COSTS AND RETURNS FOR FARROW-FINISHING ENTERPRISES - 1983
VERMILION REGION

	Group Average	Your Farm
A. INCOME		
Number of Farms	3	_____
Herd Size (Head)	79.50	_____
Number of Head Sold	931.50	_____
Total Weight Produced (Cwt.)	1,965.87	_____
Total Weight Sold (Cwt.)	1,879.25	_____
	------ $ Per Head Sold -----	
Livestock Sales	108.50	_____
Inventory Adjustment	13.61	_____
Miscellaneous Receipts		_____
GROSS INCOME	122.12	_____
B. OPERATING COSTS		
Equipment - Fuel and Repairs	3.87	_____
Miscellaneous Tools	0.30	_____
Building Repairs	2.93	_____
Fence and Well Repairs		_____
Operating Capital Interest Pd.	3.08	_____
Utilities	2.57	_____
Insurance and Licenses	1.18	_____
Property Taxes	0.02	_____
Accounting and Legal	0.27	_____
Hired Labour	0.25	_____
Livestock Purchases		_____
Vet. and Medicine	0.70	_____
Custom Work Hired	0.96	_____
Transporting and Marketing		_____
Bedding and Supplies	0.36	_____
Heating Fuel	1.64	_____
Other	0.49	_____
Home-Grown Feed	21.40	_____
Purchased Feed	43.64	_____
Depreciation - Improvements	6.20	_____
Depreciation - Machinery	2.95	_____
TOTAL OPERATING COST	92.84	_____
C. PRODUCTION COSTS		
Operating Costs	92.84	_____
Int. on Equity - Land, Livestock	1.56	_____
Int. on Equity - Improvements	2.52	_____
Int. on Equity - Machinery & Supplies	0.60	_____
Interest on Long Term Debt	2.66	_____
Operator's Labour	23.08	_____
Family Labour	1.93	_____
TOTAL PRODUCTION COST	125.20	_____
D. MANAGEMENT FACTORS		
Return Over Operating Cost	29.28	_____
Return To Management	-3.08	_____
LABOUR USED (HOURS)	4.54	_____

TABLE 15 (cont'd)

	Group Average			
			Investment Per Head Sold ($)	Your-Farm
E. INVESTMENT ITEMS				
Livestock and Supply Inventory			79.69	
Equipment			25.26	
Buildings and Improvements			121.06	
Land			4.03	
TOTAL INVESTMENT			230.03	
	Total Quantity Fed	Total Cost ($)	Cost Per Head Sold ($)	
F. HOME-GROWN FEED				
Wheat (Bushels)				
Oats (Bushels)				
Barley (Bushels)	8,967.50	19,937.52	21.40	
Other Grain (Cwt.)				
Tame Hay (Tons)				
Native Hay (Tons)				
Silage (Tons)				
Greenfeed (Tons)				
Straw (Tons)				
Native Pasture (Aums)				
Tame Pasture (Aums)				
Aftermath Pasture (Aums)				
TOTAL COST OF HOME-GROWN FEED		19,937.52	21.40	
PURCHASED FEED				
Grain (Cwt.)				
Grain (Cwt.)	1,929.00	8,319.50	8.93	
Supplement (Cwt.)	1,160.80	17,794.50	19.10	
Complete Feed (Cwt.)	695.65	10,985.50	11.79	
Hay (Tons)				
Silage (Tons)				
Greenfeed (Tons)				
Straw - Feed (Tons)				
Straw - Bedding (Tons)				
Native Pasture (Aums)				
Tame Pasture (Aums)				
Aftermath Pasture (Aums)				
Salt, Molasses, Etc.		3,550.50	3.81	
TOTAL COST OF PURCHASED FEED		40,650.00	43.64	
TOTAL FEED COSTS		60,587.50	65.04	

SECTION IV

SUMMARY OF COSTS AND RETURNS - MILK PRODUCTION

This section provides detailed information on the average costs and returns for fluid milk production in the Vermilion region. A total of three records relating to the 1983 production year was obtained from dairy farms in the Vermilion Region. The number of cows per farm ranged from 22 to 38 with the average being 31.67. Altogether, a total of 83 milking cows was considered. To facilitate easy interpretation, all of the data presented in this section are on a per hectolitre basis.

One of the main efficiency measures used in comparing the performance of dairy herds is that of milk production. In 1983, the annual milk production as reported by study participants ranged from 40.26 hectolitres per cow to 65.89 hectolitres per cow. When expressed on a group basis, average milk production was 54.86 hectolitres per cow, an amount that was approximately 4.0 per cent lower when compared to the average of 57.05 hectolitres per cow reported by the milk producers involved in the 1983 Provincial Fluid Milk Study (Refer to report "Economics of Milk Production in Alberta - 1983 Agdex no. 821-1).

Like milk production, another measure of efficiency used is that of feed cost per hectolitre of milk produced. Feed costs per hectolitre of milk in 1983 for the Vermilion Region was $17.13 as compared to the provincial average of $15.86.

As is evident from Table 16, the data is divided into six sections. Section A provides detailed information relating to milk and livestock sales. Net livestock sales may be defined as the dollar difference between cattle bought and sold and represent an amount that can be either positive or negative. Inventory adjustment is used to indicate any change in the value of livestock from the beginning to the end of the twelve month study period. Receipts from milk sales and subsidy were $40.15 per hectolitre while receipts from livestock sales and inventory adjustment were $10.68 per hectolitre. This compares with the 1983 provincial average return of $43.83 per hectolitre for milk sales and $2.74 per hectolitre for livestock sales and inventory adjustment.

Section B lists the various items comprising operating costs. Equipment expenses include fuel and repairs that were allocated to the milking enterprise. Repairs and maintenance of livestock facilities and wells are expressed on a per hectolitre of milk basis. Hired labour represents the amount of cash that was spent for full and part-time help. Home-grown feed valued at fair market value accounted for 73.3 per cent of the total feed cost. Interest on operating capital was based on the allocation of operating interest paid for the twelve month period. Depreciation of fixed assets is included in the operating cost. Operating cost per hectolitre of milk in 1983 was $36.47, of which $17.13 or 47.0 per cent was feed.

Section C completes the production cost section by accounting for overhead costs and unpaid labour. Interest on equity was calculated using the market value for all investment items and applying a desired rate of return as indicated by the participant. The interest rate used in the calculation of opportunity costs was seven per cent. Also included in this section are the long term interest paid on loans for fixed assets as well as unpaid family labour. Interest on equity and long term interest paid amounted to $4.74 per hectolitre while the value of unpaid labour was $11.10 per hectolitre. As a result, total production costs in 1983 were $52.31 per hectolitre compared to the 1983 provincial cost of $41.62 per hectolitre.

Section D provides an evaluation of the fluid milk enterprise. Of great significance is the return over operating cost which is usually the figure that is referred to when choosing among different farming alternatives. Costs which are not included in the operating cost section may be considered as general farm overhead and may not always be taken into account in decision making. Return over operating costs for milk production was $14.35 per hectolitre while total returns were insufficient by $1.49 per hectolitre in covering all production costs. Total labour hours per cow is also shown in this section. As the study results have indicated the average labour requirement per milk cow in 1983 was 102.04 hours versus 80.5 hours per cow reported by the dairy producers involved in the Provincial Fluid Milk study. As to the significance of hired labour, 6.5 per cent of the total labour cost was hired as opposed to the provincial average of 26.0 per cent.

Total investment as used by the fluid milk enterprise is indicated in Section E. Investment per cow in 1983 (includes the cow herd, buildings, building site, and equipment) was $6,130.61. The calculated rate of return on investment in 1983 was 2.90 per cent.

Section F provides in detail the feed inputs by total quantity, total cost, and cost per head sold. This kind of information is most useful to livestock and fluid milk producers who are interested in comparing their feed inputs and costs to those of the group.

TABLE 16: COSTS AND RETURNS FOR FLUID MILK PRODUCTION - 1983
VERMILION REGION

	Group Average	Your Farm
A. INCOME		
Number of Farms	3	
Number of Cows	31.67	
Milk Production (Hl/Cow)	54.86	
	$/Hl	
Milk Sales	39.27	
Subsidy	0.88	
Net Livestock Sales	4.55	
Inventory Adjustment	6.13	
GROSS INCOME	50.82	
B. OPERATING COSTS		
Equipment - Fuel and Repairs	2.11	
Miscellaneous Tools	0.32	
Building Repairs	1.38	
Fence and Well Repairs	0.24	
Operating Capital Interest Pd.	0.36	
Utilities	0.42	
Insurance and Licenses	0.67	
Property Taxes	0.12	
Accounting and Legal	0.04	
Hired Labour	0.77	
Vet. and Medicine	1.42	
Custom Work Hired	1.53	
Transporting and Marketing	5.03	
Bedding and Supplies		
Other	0.09	
Home-Grown Feed	12.55	
Purchased Feed	4.58	
Depreciation - Improvements	1.83	
Depreciation - Machinery	3.01	
TOTAL OPERATING COST	36.47	
C. PRODUCTION COSTS		
Operating Costs	36.47	
Int. on Equity - Land, Livestock	1.55	
Int. on Equity - Improvements	.16	
Int. on Equity - Machinery & Supplies	.98	
Interest on Long Term Debt	2.05	
Operator's Labour	7.67	
Family Labour	3.43	
TOTAL PRODUCTION COST	52.31	
D. MANAGEMENT FACTORS		
Return Over Operating Cost	14.35	
Return To Management	-1.49	
LABOUR USED (HOURS/Hl)	1.86	

TABLE 16 (cont'd)

	Group Average			
			Investment Per Hl Sold ($)	Your--Farm
E. INVESTMENT ITEMS				
Livestock and Supply Inventory			49.44	
Equipment			27.22	
Buildings and Improvements			35.09	
Land			21.84	
TOTAL INVESTMENT			133.59	
	Total Quantity Fed	Total Cost ($)	Cost Per HL Sold ($)	
F. HOME-GROWN FEED				
Wheat (Bushels)				
Oats (Bushels)	1,268.33	2,029.33	1.17	
Barley (Bushels)	2,794.67	6,986.66	4.02	
Other Grain				
Tame Hay (Tons)	71.33	4,680.00	2.69	
Native Hay (Tons)				
Silage (Tons)	110.00	5,500.00	3.17	
Greenfeed (Tons)				
Straw (Tons)	90.33	2246.67	1.29	
Native Pasture (Aums)	33.33	230.00	0.13	
Tame Pasture (Aums)	17.50	122.50	0.07	
Aftermath Pasture (Aums)				
TOTAL COST OF HOME-GROWN FEED		21,795.16	12.55	
PURCHASED FEED				
Grain (Cwt.)				
Grain (Cwt.)				
Supplement (Cwt.)	176.00	2,589.33	1.49	
Complete Feed (Cwt.)	260.00	2,078.00	1.20	
Hay (Tons)	14.67	733.33	0.42	
Silage (Tons)	36.00	215.00	0.12	
Greenfeed (Tons)				
Straw - Feed (Tons)				
Straw - Bedding (Tons)				
Native Pasture (Aums)		171.67	0.10	
Tame Pasture (Aums)				
Aftermath Pasture (Aums)				
Salt, Molasses, Etc.		2,174.67	1.25	
TOTAL COST OF PURCHASED FEED		7,962.00	4.58	
TOTAL FEED COSTS		29,757.16	17.13	

SECTION V

SUMMARY OF COSTS AND RETURNS BY SIZE OF OPERATION

A general characteristic of any production unit is that the unit becomes more efficient as its scale of operation increases. However, beyond a certain size any further expansion results in diseconomies of scale due to the limitations of labour, capital, equipment, etc. Thus, as the size of an operation increases cost savings can be expected especially in areas such as fixed overhead and operating costs. For example, as a farm increases its acres its fixed machinery ownership costs per acre will decrease. Also, operating cost savings can be achieved through the use of larger equipment, bulk buying and more efficient use of labour and management, all of which results in a higher return to management.

To determine whether the size of operation had any effect on the costs and returns for wheat, barley, and canola study participants were divided into two size groups. The size groups analysed consisted of farms having less than 800 seeded acres and those with 800 seeded acres or more.

Wheat Production Costs By Size Of Operation

Costs and returns for wheat production are shown in Table 17. Farms with less than 800 seeded acres (smaller farms) had a yield advantage of 1.36 bushesl per acre over farms with 800 seeded acres and more (larger farms), but reported a lower return per acre. To illustrate, smaller farms had an average receipt of $148.79 per acre as compared to $156.70 per acre for the larger farms.

Total operating costs on smaller farms was somewhat lower at $94.38 per acre as opposed to $95.32 per acre incurred by larger farms. However, on a per acre basis smaller farms reported higher costs for material ($35.37 versus $30.25) and interest on operating capital ($2.34 versus $1.07 per acre). Larger farms as expected had higher costs for

TABLE 17: SUMMARY OF COSTS AND RETURNS FOR WHEAT PRODUCTION BY FARM SIZE - 1983
VERMILION REGION

		LESS THAN 800 ACRES		800 ACRES AND MORE	
A.	INCOME				
	Number of Farms	23		19	
	Acreage Per Farm	143.95		335.63	
	Yield (Bu/Acre)	35.98		34.62	
		- - - - - - - - -	$/Acre	- - - - - - - - -	
	Total Value	145.59		152.92	
	Crop Insurance Receipts	0.23		1.64	
	Miscellaneous Receipts	2.97		2.14	
	Total Receipts	148.79	4.14/Bu	156.70	4.53/Bu
B.	OPERATING COSTS				
	Fertilizer	19.32		18.41	
	Chemicals	9.19		5.15	
	Seed Purchased	1.69		1.83	
	Home-Grown Seed	5.17		4.86	
	Custom Work Hired	1.31		1.26	
	Crop and Hail Insurance	2.47		2.90	
	Cash Rent and Crop Share	5.76		11.25	
	Machinery Operating Costs	17.04		17.00	
	Miscellaneous Equipment				
	Building Repairs	0.32		0.34	
	Interest on Operating Capital	2.34		1.07	
	Utilities	1.44		1.29	
	Other Insurance	0.66		0.68	
	Property Taxes	1.97		1.95	
	Accounting and Legal Fees	0.40		0.29	
	Other	0.60		0.62	
	Hired Labour	1.76		4.09	
	Tools Purchased	0.93		0.50	
	Depreciation	22.01		21.84	
	Total Operating Costs	94.38	2.62/Bu	95.32	2.75/Bu
C.	PRODUCTION COSTS				
	Operating Costs	94.38		95.32	
	Interest on Equity - Owned Land	25.07		24.21	
	Interest on Equity - Improvements	2.56		2.73	
	Interest on Equity - Machinery	8.25		10.41	
	Interest on Equity - Supplies	0.59		0.32	
	Long Term Interest Paid	15.17		10.63	
	Unpaid Labour	19.23		12.74	
	Total production Costs	165.25	4.59/Bu	156.37	4.52/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	54.41	1.51/Bu	61.38	1.77/Bu
	Return To Management	-16.46	-0.46/Bu	0.33	0.01/Bu
	Land Investment	593.45		585.07	
	Building and Machinery Investment	216.94		221.46	
	Labour Hours (Per Acre)	2.93		2.39	

cash rent/crop share implying a greater proportion of rented land in their operations. Total operating costs on a per bushel basis was $2.62 for the smaller farms and $2.75 for the larger farms. When comparing total production costs, these were found to be higher on the smaller farms at $165.25 per acre versus that of $156.37 per acre for the larger farms. Higher interest costs associated with capital ownership along with higher labour costs accounted for the difference.

Labour hours used per acre was higher on the smaller farms at 2.93 versus 2.39 for the larger farms. Total building, machinery, and land investment for the smaller farms was $810.39 per acre as compared to $806.53 per acre reported for the larger farms. Return over operating cost and per acre basis for the smaller and larger farms were $54.41 ($1.51 per bushel) and $61.38 ($1.77 per bushel), respectively. Also, smaller farms were short by $16.46 per acre ($0.46 per bushel) in covering their total production costs while larger farms reported a return to management (profit) of $0.33 per acre or $0.01 per bushel.

Barley Production Costs By Size Of Operation

Presented in Table 18 are the costs and returns for barley production by size of operation. As can be seen from the table, average yield on the smaller farms was down by 2.77 bushels per acre when compared to the larger farms, and the fact that both size groups reported receiving similar barley prices explains the higher returns observed for the larger farms. Return per acre was $136.89 for the larger farms compared to that of $127.90 realized by the smaller farms.

As was the case with wheat producers, smaller farms experienced lower cash rent/crop share and material costs but higher fuel, repair interest on operating capital, and depreciation costs. Total operating costs for the larger farms was $93.46 per acre or $1.80 per bushel. For the smaller farms this value was $98.95 per acre or $2.01 per bushel.

TABLE 18: SUMMARY OF COSTS AND RETURNS FOR BARLEY PRODUCTION BY FARM SIZE-1983
VERMILION REGION

		LESS THAN 800 ACRES		800 ACRES AND MORE	
A.	INCOME				
	Number of Farms	14		17	
	Acreage Per Farm	115.86		329.29	
	Yield (Bu/Acre)	49.29		52.06	
		- - - - - - - - -	$/Acre	- - - - - - - - -	
	Total Value	122.89		128.84	
	Crop Insurance Receipts			4.31	
	Miscellaneous Receipts	5.01		3.75	
	Total Receipts	127.90	2.59/Bu	136.89	2.63/Bu
B.	OPERATING COSTS				
	Fertilizer	21.25		21.06	
	Chemicals	7.51		5.52	
	Seed Purchased	3.52		2.57	
	Home-Grown Seed	5.36		2.67	
	Custom Work Hired	1.33		4.12	
	Crop and Hail Insurance	2.93		2.65	
	Cash Rent and Crop Share	0.64		10.78	
	Machinery Operating Costs	19.92		14.26	
	Miscellaneous Equipment	0.04			
	Building Repairs	0.97		0.44	
	Interest on Operating Capital	3.38		1.70	
	Utilities	1.70		1.17	
	Other Insurance	0.80		0.97	
	Property Taxes	2.69		1.48	
	Accounting and Legal Fees	0.75		0.41	
	Other	1.08		1.83	
	Hired Labour	2.22		3.11	
	Tools Purchased	0.90		0.25	
	Depreciation	21.97		18.44	
	Total Operating Costs	98.95	2.01/Bu	93.46	1.80/Bu
C.	PRODUCTION COSTS				
	Operating Costs	98.95		93.46	
	Interest on Equity - Owned Land	29.94		14.37	
	Interest on Equity - Improvements	2.87		1.59	
	Interest on Equity - Machinery	8.20		5.98	
	Interest on Equity - Supplies	0.48		0.14	
	Long Term Interest Paid	14.21		17.37	
	Unpaid Labour	22.02		11.58	
	Total production Costs	176.68	3.58/Bu	144.49	2.78/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	28.94	0.59/Bu	43.44	0.83/Bu
	Return To Management	-48.78	-0.99/Bu	-7.60	-0.15/Bu
	Land Investment	638.40		585.89	
	Building and Machinery Investment	227.25		172.09	
	Labour Hours (Per Acre)	3.70		2.31	

Total production costs for barley on smaller farms were approximately 22.3 per cent higher than that for larger farms. Once again, the interest costs associated with the higher investment per acre together with higher labour cost accounted for this difference. Production costs for the smaller farms were $176.68 per acre ($3.58 per bushel) and $144.49 per acre ($2.78 per bushel) for the larger farms.

Returns over operating costs were $28.84 per acre and $43.44 per acre for the smaller and larger farms, respectively. However, both size groups failed to generate sufficient returns to cover their total production cost as larger farms were short $7.60 per acre while the smaller farms were short $48.78 per acre.

Canola Production Costs By Size Of Operation

Table 19 shows the costs and returns associated with canola production by size of operation. Canola yields were approximately 12 per cent higher on smaller farms as compared to larger farms. Average yield per acre was 21.07 bushels for the smaller farms while larger farms reported 18.76 bushels. Consequently, returns per acre were $174.82 and $159.21 for the smaller and larger farms, respectively.

Even though yields were higher on smaller farms, lower costs for fertilizer and chemicals were observed. However, they did report significantly higher costs for depreciation, machine fuel and repairs, and crop insurance. The case rent/crop share value of $9.62 per acre reported by the smaller farms in 1983 was quite unusual, since smaller farms usually grow a larger percentage of their crops on owned land. The smaller farms usually grow a large percentage of their crops on owned land but in 1983 they reported a cash rent/crop share cost of $9.62 per acre. Total operating costs for the smaller farms averaged $108.88 per acre or $5.17 per bushel while the larger farms reported operating costs of $105.86 per acre or $5.64 per bushel. As anticipated, the average large farm with 2.5 times as many acres as the average small farm experienced lower costs for depreciation, machine fuel and repairs and cash overhead such as insurance and utilities.

TABLE 19:SUMMARY OF COSTS AND RETURNS FOR CANOLA PRODUCTION BY FARM SIZE-1983
VERMILION REGION

		LESS THAN 800 ACRES		800 ACRES AND MORE	
A.	INCOME				
	Number of Farms	13		20	
	Acreage Per Farm	122.54		325.15	
	Yield (Bu/Acre)	21.07		18.76	
		- - - - - - - - -	$/Acre	- - - - - - - - -	
	Total Value	162.49		143.49	
	Crop Insurance Receipts	9.06		11.51	
	Miscellaneous Receipts	3.26		4.20	
	Total Receipts	174.82	8.30/Bu	159.21	8.49/Bu
B.	OPERATING COSTS				
	Fertilizer	17.16		19.19	
	Chemicals	14.43		15.05	
	Seed Purchased	3.03		3.35	
	Home-Grown Seed			0.39	
	Custom Work Hired	3.14		4.76	
	Crop and Hail Insurance	5.40		3.93	
	Cash Rent and Crop Share	9.62		12.43	
	Machinery Operating Costs	16.37		15.91	
	Miscellaneous Equipment				
	Building Repairs	0.90		0.37	
	Interest on Operating Capital	2.24		1.76	
	Utilities	1.64		1.21	
	Other Insurance	0.75		0.95	
	Property Taxes	2.24		1.88	
	Accounting and Legal Fees	0.52		0.37	
	Other	0.82		1.26	
	Hired Labour	1.40		3.44	
	Tools Purchased	1.00		0.36	
	Depreciation	28.22		19.26	
	Total Operating Costs	108.88	5.17/Bu	105.86	5.64/Bu
C.	PRODUCTION COSTS				
	Operating Costs	108.88		105.86	
	Interest on Equity - Owned Land	21.36		17.73	
	Interest on Equity - Improvements	3.28		2.15	
	Interest on Equity - Machinery	10.15		7.74	
	Interest on Equity - Supplies	0.48		0.23	
	Long Term Interest Paid	18.63		13.45	
	Unpaid Labour	23.47		11.79	
	Total production Costs	186.62	8.86/Bu	158.93	8.47/Bu
D.	MANAGEMENT FACTORS				
	Return Over Operating Costs	65.94	3.13/Bu	53.35	2.84/Bu
	Return To Management	-11.81	-0.56/Bu	0.27	0.01/Bu
	Land Investment	624.74		594.26	
	Building and Machinery Investment	280.41		189.93	
	Labour Hours (Per Acre)	3.61		2.27	

Total production costs on the smaller farms amounted to $186.62 per acre or $8.86 per bushel produced and with returns totalling $174.82 per acre were short $11.81 per acre ($0.56 per bushel), in covering all production costs. Investment on these farms amounted to $905.15 per acre and had a total labour requirement of 3.61 hours per acre.

Unlike the smaller farms, the average total returns generated by the larger farms was more than sufficient to cover the total production cost resulting in those farms experiencing a positive return to management of $0.27 per acre ($0.01 per bushel). Also, with an investment of $784.19 per acre these farms had a return on equity of 5.30 per cent. Machinery investment on larger farms at $189.93 per acre was about 32 per cent less than that reported for the smaller farms. In addition, their labour requirement was 2.27 hours per acre.